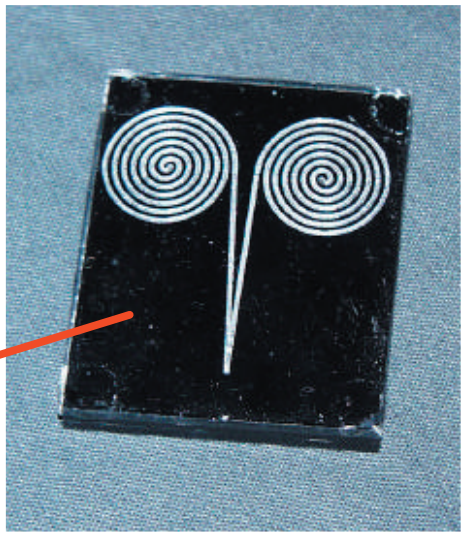
Capillary Flow Biosensor



DESCRIPTION:

The Naval Research Laboratory has developed a biosensor that takes advantage of the waveguiding properties of a capillary tube to integrate the signal over an increased surface area without simultaneously increasing background noise from the detector. This method offers approximately two orders of magnitude greater sensitivity than has been achieved using the same immunoassay reagents in a fiber-optic or planar-array configuration. Multianalyte detection can be attained by passing the sample through multiple capillaries, each coated with a different antibody, either sequentially or in parallel depending on the amount of sample available.

ADVANTAGES/FEATURES:

- **Sensitive:** detection levels as low as 30-50 pg/ml
- **Selective:** detection of any biomolecule for which an antibody is available
- **Long-lasting:** 10+ hours even after multiple exposures to high concentrations (e.g., 1000 µg/L)
- **Rapid:** response time as low as <2 min
- Compact, light-weight, and rugged
- Low-cost, disposable sensor cartridge
- Licensable under the following US patents: 5,183,740; 6,020,209; 6,245,296; 6,323,042; 6,750,031; and 6,808,937

APPLICATIONS:

- Public safety/first responders (biological agents)
- Law enforcement and work place testing (drugs of abuse)
- Environmental testing and monitoring
- Underwater chemical sensing for port and harbor security
- Agricultural/veterinary testing and diagnostics
- Food/beverage safety and quality control
- Water quality monitoring

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